

IB Biology

Internal Assessment

The Evolution of Feeding Strategies in Birds

Aim: To investigate the effect of variation in bird feeding strategies with objects representing different shaped beaks of a fictitious species of bird.

This simulation will be done using the following materials:

- Clothes pin
- Cup with brown beans
- Dissecting needle
- Tweezers
- Popsicle stick
- Spoon
- Tongs
- Stopwatch
- Beaker/Petri dish

General Instructions:

- This is an individual activity wherein you will collect your own raw data. You will have a partner to help you time the success of your feeding strategy.
- You will have 30 seconds to collect as much food as possible with your feeding appendage and place it inside the beaker/Petri dish.
- Each “beak” must be held with one hand. The other hand should be used to hold the cup in place on the table. Hold the utensils in the same way you would normally do.
- You will repeat your trial 5 times for each feeding appendage. Notes: 1) You can only retrieve one bean at a time. 2) You cannot tilt the cup. 3) Beans cannot be thrown out of the cup. 4) Practice a couple of times before you start to get used to the tool. 5) Don’t change your method between trials.

You will be graded on:

- Data collection and Processing
 - Table (raw/processed data)
 - Show how processing was done
 - Qualitative Observations
 - Graph
 - Include uncertainties (raw/processed data)
- Conclusion and Evaluation
 - State conclusion (mention all tools)
 - Relate the results to natural selection
 - Evaluate the limitations involved in the procedures/ results (mention systematic errors/random errors)
 - Suggest ways to improve the experiment

Your Lab Report must include:

- Title (above)
- Results (quantitative and qualitative)
- Conclusion
- Evaluation

Read the IB rubric before you start.

DCP GRADE: _____/6

CE GRADE: _____/6

Data collection and processing

Levels/marks	Aspect 1	Aspect 2	Aspect 3
	Recording raw data	Processing raw data	Presenting processed data
Complete/2	Records appropriate quantitative and associated qualitative raw data, including units and uncertainties where relevant.	Processes the quantitative raw data correctly.	Presents processed data appropriately and, where relevant, includes errors and uncertainties.
Partial/1	Records appropriate quantitative and associated qualitative raw data, but with some mistakes or omissions.	Processes quantitative raw data, but with some mistakes and/or omissions.	Presents processed data appropriately, but with some mistakes and/or omissions.
Not at all/0	Does not record any appropriate quantitative raw data or raw data is incomprehensible.	No processing of quantitative raw data is carried out or major mistakes are made in processing.	Presents processed data inappropriately or incomprehensibly.

Conclusion and evaluation

Levels/marks	Aspect 1	Aspect 2	Aspect 3
	Concluding	Evaluating procedure(s)	Improving the investigation
Complete/2	States a conclusion, with justification, based on a reasonable interpretation of the data.	Evaluates weaknesses and limitations.	Suggests realistic improvements in respect of identified weaknesses and limitations.
Partial/1	States a conclusion based on a reasonable interpretation of the data.	Identifies some weaknesses and limitations, but the evaluation is weak or missing.	Suggests only superficial improvements.
Not at all/0	States no conclusion or the conclusion is based on an unreasonable interpretation of the data.	Identifies irrelevant weaknesses and limitations.	Suggests unrealistic improvements.